City of Tampa Mobility Plan

Final Report

Prepared for:

City of Tampa Transportation Division
306 East Jackson Street
4th Floor, East
Tampa, FL 33602
Phone: (813) 274-8048
www.tampagov.net/dept_transportation

Prepared by:

Tindale Oliver & Associates, Inc.
1000 North Ashley Drive
Suite 100
Tampa, FL 33602
Phone: (813) 224-8862
www.tindaleoliver.com

May 17, 2012

Table of Contents

Introduction....1
Project Phases....4
Mobility....4
Safety....6
Walk/Bike Improvements....7
Conclusion....8

Tables

Table 1 - Final Intersection Project List....2
Table 2 - Final Roadway Project List....2
Table 3 - Final Safety Improvement Project List....3
Table 4 - Final Walk/Bike “Near Term” Project List....3
Table 5 -Final Mobility Candidate Project List....5
Table 6 -Final Mobility Candidate Project List....5
Table 7 - City of Tampa "Top 40" Crash Locations....6
Table 8 - Final Safety Project List....7
Table 9 -Intersection Improvements Summary....9
Table 10 –Roadway Improvements Summary....9
Table 11 – Safety Improvement Summary....10
Table 12 – Walk/Bike “Near Term” Improvements Summary....10

Maps

Map 1 - Mobility Projects Studied....11
Map 2 - Recommended Mobility Projects....12

Appendices

Appendix A: Tech Memo One – Analysis Methodology

Appendix B: Tech Memo Two – Analysis of Expected Operational Improvements

Appendix C: Tech Memo Three – Connstructability Screening and Preliminary Cost Estimation

Appendix D: Tech Memo Four – Supplemental Evaluation Screening

Appendix E: City of Tampa –Considered Project List

Appendix F: City of Tampa Intersection Safety Review

Appendix G: Walk-Bike Plan Priority Project List Tech Memo

Introduction

Tindale Oliver & Associates, Inc. has simultaneously completed three Mobility Plan projects within the City of Tampa in the areas of Roadway Capacity, Safety, and Multimodal Improvements. The goal of these three efforts is to create a list of needed improvements to be used by the City to program future projects as funding becomes available.

Based on the analysis presented of these reports, the following prioritized lists have been compiled. Tables 1 through 4 below show the final prioritized project recommendations. Map 2 on page eight shows the location of these projects. The list in Table 1 is not all inclusive of potential projects within the City. This analysis focused on improvements that are not fully funded.

Table 1 - Final Intersection Project List

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate	ROW Needs?	B:C Ratio (Safety)	HSIP Eligible?
Intersection Improvements	South MacDill Ave. at West El Prado Blvd.	Interbay	Construct NB and SB Left Turn Lanes	Limited ROW	$ 83,130.20	N	359.7	Y
	North Dale Mabry Hwy. at West MLK Jr. Blvd.	Westshore	Extend EB Left Turn Lane	Potential ROW impacts and impacts to Church Avenue	$ 2,258.97	N	19.2	Y
	South Dale Mabry Hwy. at Henderson Blvd.	Interbay	Construct NEB and SBW Left Turn Lanes	Impacts to ROW	$ 198,976.33	Y	12.9	Y
	East 109th Ave. at North 15th St.	North Central Tampa	Add Left Turn Lanes All Approaches (Alt. Construct Roundabout)		$ 143,548.91	TBD	3.4	N
	East 109th Ave. at North 22nd St.	North Central Tampa	Add NB and SB Left Turn Lanes (Alt. Construct Roundabout)		$ 37,969.49	TBD	3.3	N
	East Linebaugh Ave. at North 22nd St.	North Central Tampa	Add NB and SB Left Turn Lanes (Alt. Construct Roundabout)		$ 64,590.19	TBD	2.9	N
	North Dale Mabry Hwy. at West Spruce Street	Westshore	Extend the EB Left Turn Lane	Removed due to concerns with the Home Depot Driveway impacts				

Table 2 - Final Roadway Project List

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate	ROW Needs?	B:C Ratio (Safety)	HSIP Eligible?
Roadway Improvements	Cross Creek Blvd. - Cory Lake Drive to Morris Bridge Road	University North	Widen to Four Lane Divided	Complete funding shortfall for this project (Approx $4,000,000)	$ 7,893,024.40	N	2.9	N
	W. Linebaugh Ave from W. Armenia Ave to N. Nebraska Ave	Central/East	Widen to Three Lane Section	Provide two-way left-turn lane for site access. Provide bike lanes	$ 1,539,540.33	N	2.3	N
	Highwoods Preserve Parkway from CR 581 to New Tampa Rd.	University North	Widen to Four Lane Divided	Need in conjunction with Cross Creek Connection across I-75	$ 2,997,778.91	N	0.9	N
	S. Westshore Blvd. from Gandy Blvd. to Tyson Ave.	Interbay	Widen to Four Lane Divided	First part of the Tyson connection	$ 1,873,611.82	N	0.4	N
	Commerce Park Blvd. from Tampa Palms Blvd to New Tampa Blvd.	University North	Widen to Four Lane Divided	Removed. The design is complete. Project Removed at request of staff				
	South Westshore Blvd. from West Euclid Ave. to West Fair Oaks Ave.	Interbay	Widen to Four Lane Divided	Removed. Westshore is designated as constrained in this location				
	Morris Bridge Rd. from K-Bar Ranch to Cross Creek Blvd.	N/A	Widen to Four Lane Divided	Removed. This is a County facility				
	East Columbus Drive from North Blvd. to North 14th Street	Central/East	Widen to Four Lane Divided	Removed. This project is comitted for a 3-lane widening with an in-place development agreement.				
	Armenia Ave. from Sligh Ave. to Linebaugh Ave.	Central/East	Widen to Three Lane Section	Removed. Adjacent uses encroaching into the ROW and stormwater concerns.				
	East Cumberland Ave from N Meridian St. to Jefferson St.	Central Business	Connect Cumberland to Jefferson Street	Removed. A CDA with TCC Florida Development requires this construction.				

Table 3 - Final Safety Improvement Project List

	Location	Impact Fee District	Project Description	Project Notes
FDOT Identified Safety Improvements	Armenia Ave. at Tampa Bay Blvd.	Central/East	Access Management	Consolidate Driveways North of the Intersection
	Armenia Ave. at Sligh Ave.	Central/East	Signal Modification and Access Management	Modify signal for northbound protected phasing. Eliminate the southbound
	Waters Ave. (CR587A) at Armenia Ave.	Central/East	Access Management	Extend raised median east of the intersection to provide an eastbound lane
	Waters Ave. (CR587A) at Rome Ave.	Central/East	Construct Left Turn Lanes	Provide eastbound and westbound left turn lanes
	Waters Ave (CR587A) at N. Boulevard	Central/East	Construct Left Turn Lanes	Provide eastbound and westbound left turn lanes
	Howard Ave. at Green Street	Central/East	Signal Modifications	Increase signal conspicuity for northbound and westbound approaches with
	Howard Ave. at Main St.	Central/East	Signal Timing	Evaluate signal timing progression
	Bruce B. Downs Blvd. (CR 581) at Regents Park Dr.	University North	Signal Modifcation	Provide protected only left turn phasing into Walmart. Consider dual left turn.
	McKinley Dr. (CR 585A) at Bougainvillea Ave.	North Central	Signal Modification	Provide protected permissive left turn phasing NB and SB

Table 4 - Final Walk/Bike "Near Term" Project List

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate
Walk-Bike Plan Recommendations	Lake Ave from Florida Ave to 22nd St.	Downtown	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 107,500.00
	Palm Ave from 15th St. to 22nd St.	Downtown	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 17,500.00
	Gray St. from Westshore Blvd. to Willow Ave	Downtown-Westshore	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 175,000.00
	Serena Dr. from 46th St. to 52nd St.	USF	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 28,000.00
	Bougainvillea Ave from Nebraska Ave to 30th St	USF	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 67,500.00
	22nd St. from Busch Blvd to Fowler Ave	USF	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 97,500.00
	North Blvd from Kennedy Blvd to Cass St	Downtown	Accompany Resurfacing	Provide either marked bike lanes or wide outside lanes and shared lane	$ 250,000.00
	Lois Ave from Kennedy Blvd to Boy Scout Blvd	Westshore	Accompany Resurfacing	Provide either marked bike lanes or wide outside lanes and shared lane	$ 750,000.00
	Palm Ave from N. Boulevard to Nebraska Ave.	Downtown	CIP "Line Item" Projects	Convert from a 4-lane divided section to a 2-lane divided section with	$ 750,000.00
	Willow Ave from Swann Ave to Platt St.	Downtown	CIP "Line Item" Projects	Enhance crosswalk markings, existing pedestrian signals, and/or consider the	
	Willow Ave from Platt St. to Cleveland St.	Downtown	CIP "Line Item" Projects	Provide bike lanes and consider providing a dual southbound left turn lanes.	
	Willow Ave from Cleveland St. to Cypress St.	Downtown	CIP "Line Item" Projects	Provide shared lane markings	
	Willow Ave from Cypress St. to Main St	Downtown	CIP "Line Item" Projects	Enhance crosswalks, intersection pedestrian features and complete sidewalk	$ 500,000.00
	Bougainvillea Ave from 30th St. to 46th St.	USF	CIP "Line Item" Projects	Provide shared use path along the south side of the roadway; complete 0.35	$ 250,000.00
	30th St from Busch Blvd. to Fowler Ave.	USF	CIP "Line Item" Projects	Reduce the travel lane and median width to provide bike lanes; provide	$1,500,000.00
	Cypress Corridor from U-Path to Reo St	Westshore	CIP "Line Item" Projects	Enhance the existing trail through the park	
	Cypress Corridor from Reo St. to Frontage Rd.	Westshore	CIP "Line Item" Projects	Shared use path along the south side of the roadway	
	Cypress Corridor from Frontage Fr. To Westshore Blvd.	Westshore	CIP "Line Item" Projects	Shared lane arrows and other enhancements along Frontage Road and Lemon Street	
	Cypress Corridor from Lemon St. to Gray St.	Westshore	CIP "Line Item" Projects	Shared use path along the west side of Westshore Boulevard	$ 500,000.00
	Lois Ave from Tampa Bay Blvd. to Hillsborough Ave.	Westshore	CIP "Line Item" Projects	Provide sidewalk along one side of the roadway, enhance signalized intersection pedestrian treatments, and consider lighting enhancements.	$ 250,000.00

Project Phases

Mobility

Potential roadway segment and intersection capacity projects were provided by the City which were developed through previous identification efforts and local city knowledge. A study methodology was then derived through discussions with the City and is included as Tech Memo One in Appendix A.

Field reviews were performed and traffic counts and signal timings data were collected. To analyze the candidate projects, a Synchro model of existing conditions was created which served as the baseline for comparison. Improvements previously proposed were analyzed as well as other potentially beneficial improvements as determined by Tindale-Oliver & Associates. Projects were analyzed based on their potential to reduce the volume to capacity ratio (v/c) and delay, as well as the project cost. Where turn lanes were proposed, suggested storage lengths were calculated. The analysis procedures used are detailed in Tech Memo Two in Appendix B.

Once the proposed improvements were developed and prioritized by their capacity metrics, further investigation of any potential constructability issues was studied through field investigation and project review with the City staff. Using this information, planning level cost estimates for each candidate project were determined. Cost prohibitive projects and those with significant constructability issues were excluded from further study. Full constructability and cost estimation analysis is shown in Tech Memo Three in Appendix C.

The next step was to evaluate the candidate projects for their potential to improve traffic, pedestrian, and bicycle safety by reducing crashes and conflict points. Based on the potential to reduce crashes and the planning level cost estimate, benefit cost ratios were calculated for each project. This complete analysis can be found in Tech Memo Four in Appendix D.

Based on all the analysis phases stated above, a final candidate project priority list was created. The final mobility candidate projects determined are shown on the next page. A list of all projects locations originally considered can be found in Appendix E.

Table 5 -Final Mobility Candidate Project List

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate	ROW Needs?	B:C Ratio (Safety)	HSIP Eligible?
Intersection Improvements	South MacDill Ave. at West El Prado Blvd.	Interbay	Construct NB and SB Left Turn Lanes	Limited ROW	$ 83,130.20	N	359.7	Y
	North Dale Mabry Hwy. at West MLK Jr. Blvd.	Westshore	Extend EB Left Turn Lane	Potential ROW impacts and impacts to Church Avenue	$ 2,258.97	N	19.2	Y
	South Dale Mabry Hwy. at Henderson Blvd.	Interbay	Construct NEB and SBW Left Turn Lanes	Impacts to ROW	$ 198,976.33	Y	12.9	Y
	East 109th Ave. at North 15th St.	North Central Tampa	Add Left Turn Lanes All Approaches (Alt. Construct Roundabout)		$ 143,548.91	TBD	3.4	N
	East 109th Ave. at North 22nd St.	North Central Tampa	Add NB and SB Left Turn Lanes (Alt. Construct Roundabout)		$ 37,969.49	TBD	3.3	N
	East Linebaugh Ave. at North 22nd St.	North Central Tampa	Add NB and SB Left Turn Lanes (Alt. Construct Roundabout)		$ 64,590.19	TBD	2.9	N
	North Dale Mabry Hwy. at West Spruce Street	Westshore	Extend the EB Left Turn Lane	Removed due to concerns with the Home Depot Driveway impacts				

Table 6 -Final Mobility Candidate Project List

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate	ROW Needs?	B:C Ratio (Safety)	HSIP Eligible?
Roadway Improvements	Cross Creek Blvd. - Cory Lake Drive to Morris Bridge Road	University North	Widen to Four Lane Divided	Complete funding shortfall for this project (Approx $4,000,000)	$ 7,893,024.40	N	2.9	N
	W. Linebaugh Ave from W. Armenia Ave to N. Nebraska Ave	Central/East	Widen to Three Lane Section	Provide two-way left-turn lane for site access. Provide bike lanes	$ 1,539,540.33	N	2.3	N
	Highwoods Preserve Parkway from CR 581 to New Tampa Rd.	University North	Widen to Four Lane Divided	Need in conjunction with Cross Creek Connection across I-75	$ 2,997,778.91	N	0.9	N
	S. Westshore Blvd. from Gandy Blvd. to Tyson Ave.	Interbay	Widen to Four Lane Divided	First part of the Tyson connection	$ 1,873,611.82	N	0.4	N
	Commerce Park Blvd. from Tampa Palms Blvd to New Tampa Blvd.	University North	Widen to Four Lane Divided	Removed. The design is complete. Project Removed at request of staff				
	South Westshore Blvd. from West Euclid Ave. to West Fair Oaks Ave.	Interbay	Widen to Four Lane Divided	Removed. Westshore is designated as constrained in this location				
	Morris Bridge Rd. from K-Bar Ranch to Cross Creek Blvd.	N/A	Widen to Four Lane Divided	Removed. This is a County facility				
	East Columbus Drive from North Blvd. to North 14th Street	Central/East	Widen to Four Lane Divided	Removed. This project is comitted for a 3-lane widening with an in-place development agreement.				
	Armenia Ave. from Sligh Ave. to Linebaugh Ave.	Central/East	Widen to Three Lane Section	Removed. Adjacent uses encroaching into the ROW and stormwater concerns.				
	East Cumberland Ave from N Meridian St. to Jefferson St.	Central Business	Connect Cumberland to Jefferson Street	Removed. A CDA with TCC Florida Development requires this construction.				

Safety

Through the Florida Department of Transportation, a systematic safety review of non-state intersections within the City of Tampa was performed. Tindale-Oliver & Associates was provided by the City a list of their "Top 40" crash locations. These locations were reviewed and cross referenced with the "off-system" list generated by Tindale-Oliver and Associates' Crash Data Management System (CDMS). See Appendix F for Tindale-Oliver & Associates' *City of Tampa Intersection Review.* Intersections were assessed based on crash frequency, crash severity, and over representation of specific crash types. The City's "Top 40" crash locations based on 2009 data are shown below in Table 7.

Table 7 - City of Tampa "Top 40" Crash Locations

TOP 40 HIGH CRASH LOCATIONS
Ranked by Crash Frequency

(Total Crashes = Total Number of Reported Crashes Occurring Within 150' of the Intersection)

Rank	Intersection Location	Total Crashes	At Least One State Road?
1	40th St & Hillsborough Ave	37	Yes
2	Armenia Ave & Hillsborough Ave	23	Yes
3	22nd St & Hillsborough Ave	21	Yes
4	Hillsborough Ave & Himes Ave	21	Yes
5	Florida Ave & Waters Ave	20	Yes
6	Columbus Dr & Dale Mabry Hwy	20	Yes
7	Florida Ave & Hillsborough Ave	19	Yes
8	34th St & Hillsborough Ave	19	Yes
9	Busch Blvd & Nebraska Ave	18	Yes
10	Habana Ave & Hillsborough Ave	18	Yes
11	Ashley Dr & Kennedy Blvd	18	Yes
12	Hillsborough Ave & Lois Ave	17	Yes
13	Gandy Blvd & Manhattan Ave	17	Yes
14	50th St & Adamo Dr	16	Yes
15	Hillsborough Ave & Nebraska Ave	15	Yes
16	Cypress St & Dale Mabry Hwy	15	Yes
17	Rome Ave & Waters Ave	15	No
18	Fowler Ave & Nebraska Ave	15	Yes
19	Dr Martin Luther King Jr Blvd & Marguerite St	15	Yes
20	Dale Mabry Hwy & Hillsborough Ave	15	Yes
21	Armenia Ave & Waters Ave	15	No
22	30th St & Busch Blvd	15	Yes
23	Busch Blvd & Florida Ave	14	Yes
24	15th St & Fowler Ave	14	Yes
25	Busch Blvd & Interstate 275	13	Yes
26	Kennedy Blvd & West Shore Blvd	13	Yes
27	Dale Mabry Hwy & Kennedy Blvd	13	Yes
28	Dale Mabry Hwy & Gandy Blvd	13	Yes
29	Dr Martin Luther King Jr Blvd & Nebraska Ave	12	Yes
30	Armenia Ave & Sligh Ave	12	No
31	50th St & Broadway Ave	12	Yes
32	Hillsborough Ave & Interstate 275	11	Yes
33	Interstate 275 & Sligh Ave	11	Yes
34	Dr Martin Luther King Jr Blvd & Habana Ave	11	Yes
35	Cherokee Ave & Hillsborough Ave	11	Yes
36	Boulevard & Dr Martin Luther King Jr Blvd	11	Yes
37	Highland Ave & Hillsborough Ave	10	Yes
38	Hillsborough Ave & Macdill Ave	10	Yes
39	Nebraska Ave & Sligh Ave	10	Yes
40	Dale Mabry Hwy & Euclid Ave	10	Yes

The Tindale-Oliver & Associates' CDMS analysis yielded nine "off-system" intersections where candidate projects could improve safety. Improvements included such things as geometric improvements and signal timing modifications. These nine intersections are shown in Table 8 with 2007-2010 crash characteristics.

Table 8 - Final Safety Project List

ID	Intersection Description	Node Number	Number of Crashes	Number of Fatalities	Number of Injuries	SHSP Aggressive Driving	SHSP At Intersection	SHSP Lane Departure	SHSP Vulnerable Road User
1	Armenia Avenue at Tampa Bay Boulevard	10_15225	46	0	31	23	10	11	3
2	Armenia Avenue at Sligh Avenue	10_20696	82	0	59	42	37	7	0
3	Waters Avenue (CR 587 A) at Armenia Avenue	10_23098	134	0	138	72	32	10	9
4	Waters Avenue (CR 587 A) at Rome Avenue	10_23082	43	0	52	22	20	0	3
5	Waters Avenue (CR 587 A) at N Boulevard	10_23066	44	0	43	25	20	3	2
6	Howard Avenue at Green Street	10_12595	37	0	30	23	25	3	4
7	Howard Avenue at Main Street	10_12678	28	1	17	15	15	5	2
8	Bruce B Downs Boulevard (CR 581) at Regents Park Drive	10_32700	64	0	65	29	27	3	4
9	McKinley Drive (40th Street / CR 585 A) at Bougainvillea Avenue	10_25787	33	0	46	20	17	6	1

Comparing the City's "Top 40" crash locations with the Tindale-Oliver & Associates list above, the following exist on both lists:

- Rome Avenue at Waters Avenue
- Armenia Avenue at Waters Avenue
- Armenia Avenue at Sligh Avenue

Walk/Bike Improvements

Recently the City drafted land development procedures to implement its comprehensive plan which focuses on the following areas:

- City Business Centers (Downtown, Westshore, and USF)
- Primary Transit Facility Service Areas
- Mixed Use Corridors and Villages

In order to implement the plan, multimodal improvements were identified and prioritized in the *Walk-Bike Plan Priority Project List Technical Memorandum* dated June 29, 2011. This tech memo can be found in Appendix G. For the Phase 1 Walk/Bike analysis, the study focused on the Downtown, Westshore, and USF areas. Future Phases of the Walk/Bike analysis will review additional areas of the City as well as overall connectivity.

Two types of improvements were identified, "Complete Streets" projects (road diets, bulb outs, etc.) and stand alone projects (sidewalk construction, mid-block pedestrian islands, etc.) Overall area multimodal connectivity was the goal of the study. Planning level cost estimates were developed and the final project list was prioritized.

Conclusion

Through these three efforts, candidate projects were identified for the City to consider for inclusion into the future Capital Improvement Plans. Tables 9-12 on the following page list the projects that have been identified through these efforts. These projects are also shown on Map 2 on page 12.

As mentioned, this list is not all inclusive of potential projects within the City. This analysis focused on improvements that are not fully funded.

Table 9 -Intersection Improvements Summary

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate	ROW Needs?	B:C Ratio (Safety)	HSIP Eligible?
Intersection Improvements	South MacDill Ave. at West El Prado Blvd.	Interbay	Construct NB and SB Left Turn Lanes	Limited ROW	$ 83,130.20	N	359.7	Y
	North Dale Mabry Hwy. at West MLK Jr. Blvd.	Westshore	Extend EB Left Turn Lane	Potential ROW impacts and impacts to Church Avenue	$ 2,258.97	N	19.2	Y
	South Dale Mabry Hwy. at Henderson Blvd.	Interbay	Construct NEB and SBW Left Turn Lanes	Impacts to ROW	$ 198,976.33	Y	12.9	Y
	East 109th Ave. at North 15th St.	North Central Tampa	Add Left Turn Lanes All Approaches (Alt. Construct Roundabout)		$ 143,548.91	TBD	3.4	N
	East 109th Ave. at North 22nd St.	North Central Tampa	Add NB and SB Left Turn Lanes (Alt. Construct Roundabout)		$ 37,969.49	TBD	3.3	N
	East Linebaugh Ave. at North 22nd St.	North Central Tampa	Add NB and SB Left Turn Lanes (Alt. Construct Roundabout)		$ 64,590.19	TBD	2.9	N
	North Dale Mabry Hwy. at West Spruce Street	Westshore	Extend the EB Left Turn Lane	Removed due to concerns with the Home Depot Driveway impacts				

Table 10 –Roadway Improvements Summary

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate	ROW Needs?	B:C Ratio (Safety)	HSIP Eligible?
Roadway Improvements	Cross Creek Blvd. - Cory Lake Drive to Morris Bridge Road	University North	Widen to Four Lane Divided	Complete funding shortfall for this project (Approx $4,000,000)	$ 7,893,024.40	N	2.9	N
	W. Linebaugh Ave from W. Armenia Ave to N. Nebraska Ave	Central/East	Widen to Three Lane Section	Provide two-way left-turn lane for site access. Provide bike lanes	$ 1,539,540.33	N	2.3	N
	Highwoods Preserve Parkway from CR 581 to New Tampa Rd.	University North	Widen to Four Lane Divided	Need in conjunction with Cross Creek Connection across I-75	$ 2,997,778.91	N	0.9	N
	S. Westshore Blvd. from Gandy Blvd. to Tyson Ave.	Interbay	Widen to Four Lane Divided	First part of the Tyson connection	$ 1,873,611.82	N	0.4	N
	Commerce Park Blvd. from Tampa Palms Blvd to New Tampa Blvd.	University North	Widen to Four Lane Divided	Removed. The design is complete. Project Removed at request of staff				
	South Westshore Blvd. from West Euclid Ave. to West Fair Oaks Ave.	Interbay	Widen to Four Lane Divided	Removed. Westshore is designated as constrained in this location				
	Morris Bridge Rd. from K-Bar Ranch to Cross Creek Blvd.	N/A	Widen to Four Lane Divided	Removed. This is a County facility				
	East Columbus Drive from North Blvd. to North 14th Street	Central/East	Widen to Four Lane Divided	Removed. This project is comitted for a 3-lane widening with an in-place development agreement.				
	Armenia Ave. from Sligh Ave. to Linebaugh Ave.	Central/East	Widen to Three Lane Section	Removed. Adjacent uses encroaching into the ROW and stormwater concerns.				
	East Cumberland Ave from N Meridian St. to Jefferson St.	Central Business	Connect Cumberland to Jefferson Street	Removed. A CDA with TCC Florida Development requires this construction.				

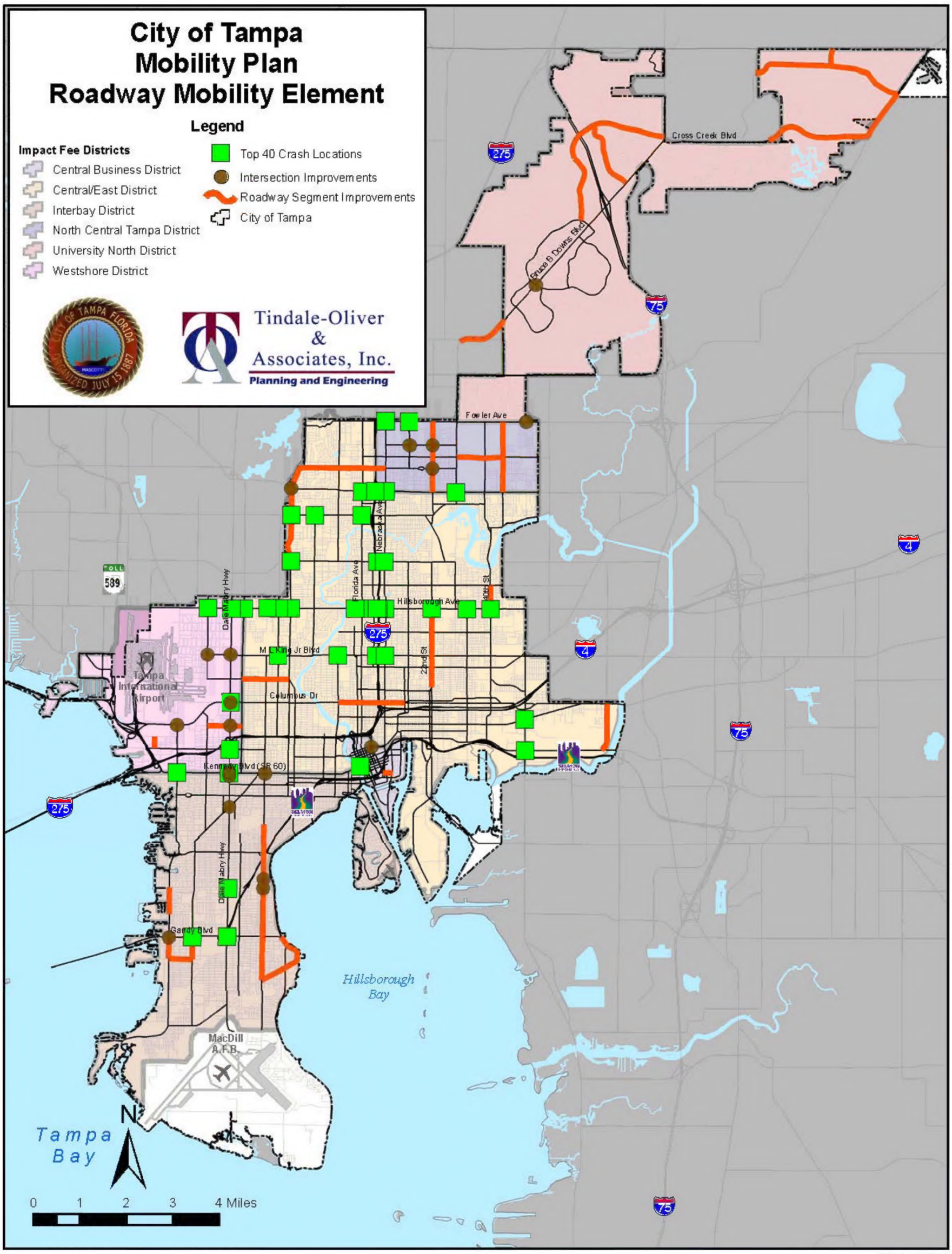
Table 11 – Safety Improvement Summary

	Location	Impact Fee District	Project Description	Project Notes
FDOT Identified Safety Improvements	Armenia Ave. at Tampa Bay Blvd.	Central/East	Access Management	Consolidate Driveways North of the Intersection
	Armenia Ave. at Sligh Ave.	Central/East	Signal Modification and Access Management	Modify signal for northbound protected phasing. Eliminate the southbound
	Waters Ave. (CR587A) at Armenia Ave.	Central/East	Access Management	Extend raised median east of the intersection to provide an eastbound lane
	Waters Ave. (CR587A) at Rome Ave.	Central/East	Construct Left Turn Lanes	Provide eastbound and westbound left turn lanes
	Waters Ave (CR587A) at N. Boulevard	Central/East	Construct Left Turn Lanes	Provide eastbound and westbound left turn lanes
	Howard Ave. at Green Street	Central/East	Signal Modifications	Increase signal conspicuity for northbound and westbound approaches with
	Howard Ave. at Main St.	Central/East	Signal Timing	Evaluate signal timing progression
	Bruce B. Downs Blvd. (CR 581) at Regents Park Dr.	University North	Signal Modifcation	Provide protected only left turn phasing into Walmart. Consider dual left turn.
	McKinley Dr. (CR 585A) at Bougainvillea Ave.	North Central	Signal Modification	Provide protected permissive left turn phasing NB and SB

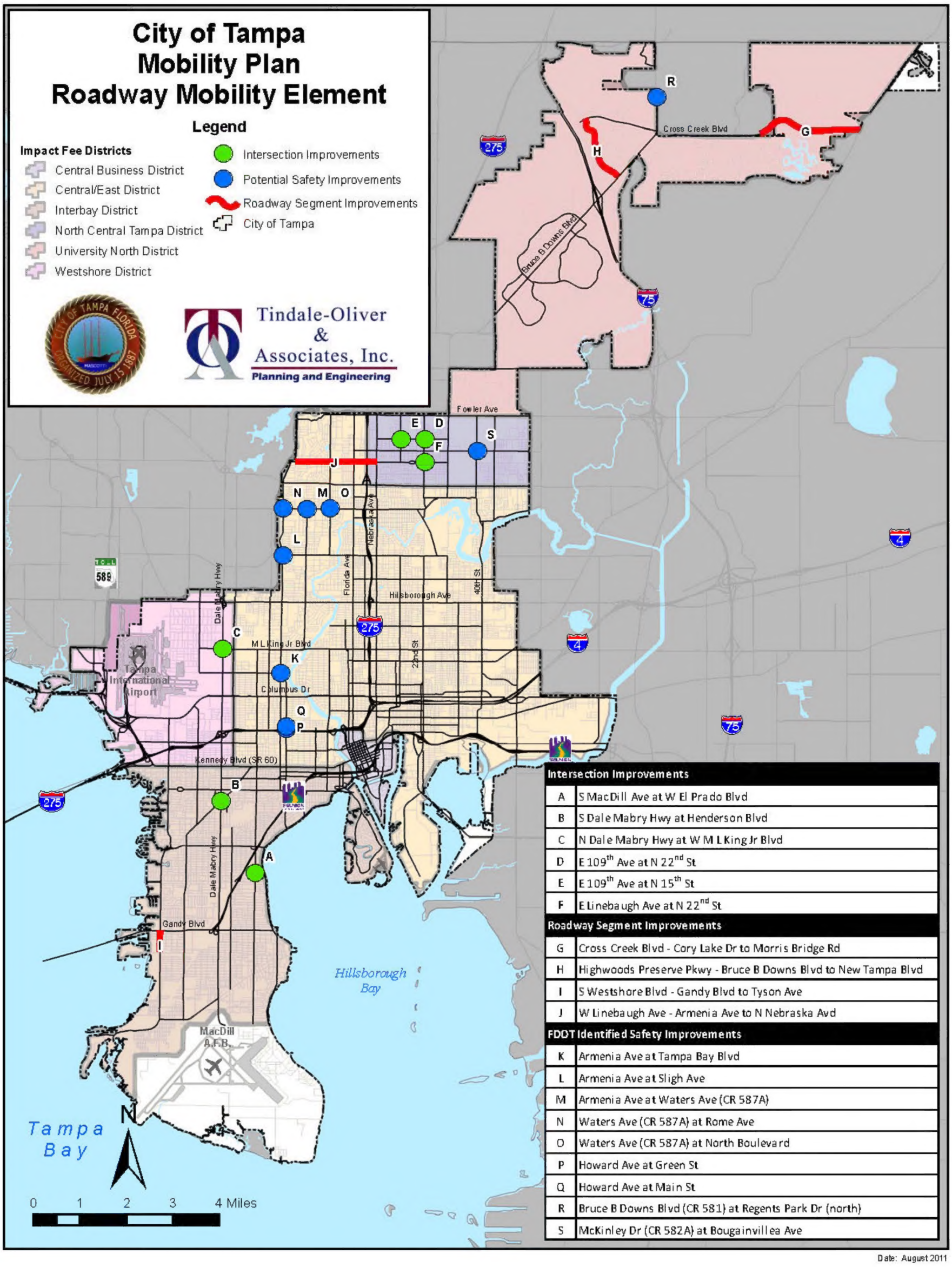
Table 12 – Walk/Bike "Near Term" Improvements Summary

	Location	Impact Fee District	Project Description	Project Notes	Planning Level Cost Estimate
Walk-Bike Plan Recommendations	Lake Ave from Florida Ave to 22nd St.	Downtown	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 107,500.00
	Palm Ave from 15th St. to 22nd St.	Downtown	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 17,500.00
	Gray St. from Westshore Blvd. to Willow Ave	Downtown-Westshore	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 175,000.00
	Serena Dr. from 46th St. to 52nd St.	USF	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 28,000.00
	Bougainvillea Ave from Nebraska Ave to 30th St	USF	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 67,500.00
	22nd St. from Busch Blvd to Fowler Ave	USF	Low Cost/Minimal Design	Shared Lane Arrows, Intersection Pedestrian Safety Enhancements	$ 97,500.00
	North Blvd from Kennedy Blvd to Cass St	Downtown	Accompany Resurfacing	Provide either marked bike lanes or wide outside lanes and shared lane	$ 250,000.00
	Lois Ave from Kennedy Blvd to Boy Scout Blvd	Westshore	Accompany Resurfacing	Provide either marked bike lanes or wide outside lanes and shared lane	$ 750,000.00
	Palm Ave from N. Boulevard to Nebraska Ave.	Downtown	CIP "Line Item" Projects	Convert from a 4-lane divided section to a 2-lane divided section with	$ 750,000.00
	Willow Ave from Swann Ave to Platt St.	Downtown	CIP "Line Item" Projects	Enhance crosswalk markings, existing pedestrian signals, and/or consider the	
	Willow Ave from Platt St. to Cleveland St.	Downtown	CIP "Line Item" Projects	Provide bike lanes and consider providing a dual southbound left turn lanes.	
	Willow Ave from Cleveland St. to Cypress St.	Downtown	CIP "Line Item" Projects	Provide shared lane markings	
	Willow Ave from Cypress St. to Main St	Downtown	CIP "Line Item" Projects	Enhance crosswalks, intersection pedestrian features and complete sidewalk	$ 500,000.00
	Bougainvillea Ave from 30th St. to 46th St.	USF	CIP "Line Item" Projects	Provide shared use path along the south side of the roadway; complete 0.35	$ 250,000.00
	30th St from Busch Blvd. to Fowler Ave.	USF	CIP "Line Item" Projects	Reduce the travel lane and median width to provide bike lanes; provide	$1,500,000.00
	Cypress Corridor from U-Path to Reo St	Westshore	CIP "Line Item" Projects	Enhance the existing trail through the park	
	Cypress Corridor from Reo St. to Frontage Rd.	Westshore	CIP "Line Item" Projects	Shared use path along the south side of the roadway	
	Cypress Corridor from Frontage Fr. To Westshore Blvd.	Westshore	CIP "Line Item" Projects	Shared lane arrows and other enhancements along Frontage Road and Lemon Street	
	Cypress Corridor from Lemon St. to Gray St.	Westshore	CIP "Line Item" Projects	Shared use path along the west side of Westshore Boulevard	$ 500,000.00
	Lois Ave from Tampa Bay Blvd. to Hillsborough Ave.	Westshore	CIP "Line Item" Projects	Provide sidewalk along one side of the roadway, enhance signalized intersection pedestrian treatments, and consider lighting enhancements.	$ 250,000.00

Map 1 - Mobility Projects Studied



Map 2 - Recommended Mobility Projects


City of Tampa
Mobility Plan
Roadway Mobility Element
Legend
Impact Fee Districts
Central Business District
Central/East District
Interbay District
North Central Tampa District
University North District
Westshore District
Intersection Improvements
Potential Safety Improvements
Roadway Segment Improvements
City of Tampa
Tindale-Oliver & Associates, Inc.
Planning and Engineering
Cross Creek Blvd
Fowler Ave
Hillsborough Ave
M L King Jr Blvd
Columbus Dr
Kennedy Blvd (SR 60)
Gandy Blvd
Dale Mabry Hwy
Florida Ave
Nebraska Ave
40th St
22nd St
Tampa International Airport
MacDill A.F.B.
Hillsborough Bay
Tampa Bay
0 1 2 3 4 Miles
Intersection Improvements
A S MacDill Ave at W El Prado Blvd
B S Dale Mabry Hwy at Henderson Blvd
C N Dale Mabry Hwy at W M L King Jr Blvd
D E 109th Ave at N 22nd St
E E 109th Ave at N 15th St
F E Linebaugh Ave at N 22nd St
Roadway Segment Improvements
G Cross Creek Blvd - Cory Lake Dr to Morris Bridge Rd
H Highwoods Preserve Pkwy - Bruce B Downs Blvd to New Tampa Blvd
I S Westshore Blvd - Gandy Blvd to Tyson Ave
J W Linebaugh Ave - Armenia Ave to N Nebraska Avd
FDOT Identified Safety Improvements
K Armenia Ave at Tampa Bay Blvd
L Armenia Ave at Sligh Ave
M Armenia Ave at Waters Ave (CR 587A)
N Waters Ave (CR 587A) at Rome Ave
O Waters Ave (CR 587A) at North Boulevard
P Howard Ave at Green St
Q Howard Ave at Main St
R Bruce B Downs Blvd (CR 581) at Regents Park Dr (north)
S McKinley Dr (CR 582A) at Bougainvillea Ave
Date: August 2011